

ABSTRACT

A transmitting device in a mobile communication system is disclosed. In the transmitting device, an encoder receives an information bit stream in a frame, which is as long as an integer multiple of a predetermined value, and generates an information symbol, a first parity symbol, and a second parity symbol by encoding each information bit. An interleaver sequentially arranges the information symbols and the first and second parity symbols by rows in an array with an integer number of rows and an integer number of columns. The interleaver reorders the columns in the array according to a predetermined rule. The interleaver further outputs a plurality of radio frames in a stream, by reading the symbols by going down each column, starting at the leftmost column and proceeding right. Each radio frame has a predetermined size. A demultiplexer demultiplexes each of the radio frames received from the interleaver into a stream of information symbols, a stream of first parity symbols, and a stream of second parity symbols. A rate matcher bypasses the stream of information symbols and punctures the streams of the first and second parity symbols for rate matching. The rate matcher works similarly when performing repetition rather than puncturing.